

23. Heart Failure-Rescue Therapy

1. Mnemonic for Acute Treatment: Give them "L- O – V - E"

- L - Lasix®/Furosemide - or other IV loop diuretics
- O - Oxygen
- V - Vasodilator: either IV Nitrate or Natreacor-(BNP)
- E - Elevated-Upright Posture

2. In-patient Care Setting Therapeutics:

- a. Oxygen usually 2 L Nasal canula
- b. Vasodilation
 - Nitroglycerin: start 5 mcg/min go to at least 10 mcg/min or
 - Natreacor®/Nesiritide: 2 mcg/kg bolus, then 0.01 mcg/kg/min up to 0.03

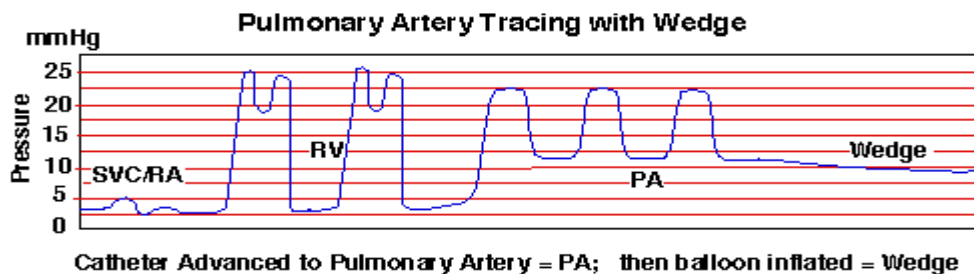
After 3 hours can rebolus at 1 mcg/kg over 60 seconds, increase infusion to 0.015 mcg/kg/min
- c. Diuretic, avoid over-diuresis after initial response
- d. Beta blockers-NOT Rescue Therapy, but can be use early when initial volume overload corrected.
- e. Short duration Intubation or BiPAP may be required
- f. Morphine: 2 mg IV bolus
- g. Viagra/Sildenafil 50 mg bid for right heart failure/ pulmonary hypertension, not long term use?
- h. Pressor increase mortality, have very few indications

3. Precipitating factors:

- a. Sodium and/or fluid overload
- b. Poor compliance with therapeutic regiment
- c. Viral and/or bacterial infections
- d. Myocardial ischemia, Acute valvular dysfunction
- e. New arrhythmia, especially atrial fibrillation
- f. Exacerbation of other comorbidities such as cancer, renal dysfunction, cirrhosis

4. Hemodynamic Monitoring: Wedge has Unclear Clinical Relevance in Chronic CHF

Swan PA Monitoring may actually significantly INCREASE mortality.



ICG "Non Invasive Swan" (CardioDynamics BioZ) uses electrical bio-impedance but has yet to establish the indicators and the timing for the appropriate use.

5. Notes: Nitrates or BNP appear to be THE MOST effective acutely acting drugs.

6. Pressor

- 1. Indicated for PROFOUND hypotension causing CNS dysfunction, or renal failure
 - 2. Dopamine, Milrinone... increase intermediate mortality.
 - 3. Vasopressin preferred
- Pitressin®/Vasopressin: 2 - 5u bolus, then 0.2- 0.5 U/min IV (BEST)
 - Intropin®/Dopamine (D1&2, $\alpha\beta$) : Low = 0.5 – 3.0 mcg/kg/min, Moderate = 3-10 mcg/kg/min
 - Dobutrex®/Dobutamine(β_1): 2 - 20 mcg/kg/min IV
 - Primacor®/Milrinone(PDE-3): 50 mcg/kg over 10 minutes, then 0.4 - 0.7 mcg/kg/min IV
 - Levophed® (Leave-them-dead)/Norepinephrine ($\alpha\beta$): 0.5 - 30 mcg/min IV